

Long time well-posedness of 2-D MHD boundary layer equation without resistivity

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Abstract

This paper investigates the long time well-posedness of 2-D MHD boundary layer equation without resistivity. It is proved that if the initial data satisfies $\begin{aligned} & \| (u_0, h_0) \|_{H^3} + \| (u_0, h_0) \|_{H^2} + \| (u_0, h_0) \|_{H^1} \leq \varepsilon, \end{aligned}$ then the life span of the solution is at least of order $\varepsilon^{\frac{1}{43}}$.

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MHD boundary layer in Sobolev-2021-8-6.pdf available at <https://authorea.com/users/335306/articles/566955-long-time-well-posedness-of-2-d-mhd-boundary-layer-equation-without-resistivity>